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10/590,637	08/23/2006	Caiteng Zhang	890-003.035	2258

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EXAMINER

HEINCE, LIAM J

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/590,637

**Applicant(s)**

ZHANG, CAITENG

**Examiner**

Liam J. Heincer

**Art Unit**

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 1-14 and 29-40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
- Paper No(s)/Mail Date 11/20/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed November 20, 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Objections***

Claims 1-14 and 29-40 are objected to because of the following informalities: there is a typo in claim 1 such that it reads "-0.1" rather than "0.1" in line 2. Additionally, claim 2 reads "soluble carbohydrates molecules" and "carbohydrates polymer". Also, both claims 29 and 30 contain the language "a solution of metal-polymer chelates is used" rather than "a solution of metal-polymer chelates being used for". Claim 8 contains a typo such that it reads "and/amino" rather than "and amino" in line 10 and "/amino" rather than "amino" in line 13. Claims 6 and 34-36 each contain a typo such that they read "greater then one" rather than "greater than one".

Appropriate correction is required.

Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 is directed towards a limitation on the polymer bridging agent. However, the instant claims never positively include a polymer bridging agent. Therefore a limitation directed towards a polymer bridging agent is not limiting with regard to the scope of the claim.

Claims 13 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 13 and 14 merely provide limitations directed towards the intended use for the metal-polymer chelates. As such, there is nothing in the claims that further limit the structure of claim 1 from which they depend.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 and 31-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Considering Claim 1-14 and 31-40: Claim 1 claims a molecule or polymer selected from the group consisting of "carbohydrate molecules, hydroxyl or hydroxyl amino, and carbohydrate polymers". It is not clear what is meant by hydroxyl or hydroxyl amino, as these are functionalities of a molecule or polymer, not a molecule or polymer themselves. For the purpose of further examination, the claim is interpreted as referring to hydroxyl or hydroxyl amino group bearing molecules. Additionally, the claim is in improper Markush form as every member in the list should be linked by the word "and". The use of the word "or" in the list is improper.

Claim 1 has limitations directed towards the percentage of each component. However it is not specified on what basis the percentages are being calculated. As concentrations can be calculated on many different basis, for example by weight, volume or molar amount, the claim is indefinite. For the purpose of further examination, the percentages are being calculated on a weight basis.

Additionally, claim 1 does not define the variable R in the formula R-COOH. This renders the claim indefinite. For the purpose of further examination, R is being interpreted as any chemical group.

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Considering Claims 2, 31, 34, and 37: Claim 2 currently reads "soluble carbohydrates molecules and hydroxyl and carbohydrates polymer, metal salts". It is unclear if all the components are being required by the claim, or if the water soluble component is chosen from the list as in the claim above. As the dependent claim 37 indicates that there can be only one soluble compound, the claim is being interpreted as having one of the claimed group of soluble compounds.

Considering Claims 3, 32, 35, and 38: Claim 3 currently reads "soluble carbohydrate and monosaccharide bimolecules, metal salts;". It is unclear if all the components are being required by the claim, or if the water soluble component is chosen from the list as in the claim above. As the dependent claim 37 indicates that there can be only one soluble compound, the claim is being interpreted as having one of the claimed group of soluble compounds.

Considering Claims 4, 33, 36, and 39: A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 4 recites the broad recitation "alkaline saponification soluble R-COOH having high or middle quantity of alkyl R", and the claim also recites "such as fatty acid or carbohydrate molecules" which is the narrower statement of the range/limitation.

Additionally claim 4 contains the language "high or middle quantity of alkyl R". There is no guidance in the original specification or claims to define what is meant by high or middle quantity. As there is no scale with which to compare the quantity of the

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alkyl, or even what value is being referred to (i.e. number of alkyl groups or length of the alkyl chain), the scope of the claim is rendered indefinite.

Considering Claims 6 and 34-36: Claims 6 and 34-36 contains the trademark/trade name Amberlite IRC-50. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe an specific acid resin and, accordingly, the identification/description is indefinite.

Additionally, claims 6 and 34-36 are directed towards compounds with the formula R-COOH. However, in the Markush group, ethylene glycol is claimed. The formula for ethylene glycol is HOCH<sub>2</sub>CH<sub>2</sub>OH. Thus the species ethylene glycol does not fall under the genus of organic acids, rendering the scope of the claim indefinite.

Considering Claim 8: Claim 8 recites the limitations "the polymer bridging agent", "inorganic polymer carrier", "plant fiber", "carboxyl resin", "amino resin" and "inorganic matter" in lines 5-11. There is insufficient antecedent basis for these limitations in the claim.

Additionally, claim 8 contains a proviso without any active limitations (lines 5-11). The proviso is merely a list of compounds without any verb to indicate what is being required of the members of the list. The proviso also appears to be directed not only to the instant composition, but towards to other compounds that are not included in the instant invention. For the purpose of further examination, the claim will be interpreted as if the proviso is not present.

Claims 8 contains the trademark/trade name Amberlite IRC-50. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35

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U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe an specific acid resin and, accordingly, the identification/description is indefinite.

In the present instance, claim 8 recites the broad recitation "polymer bridging agent", and the claim also recites "preferably a solution of methal-polymer chelates containing monosaccharide or monosaccharide bimolecule" which is the narrower statement of the range/limitation. Also, in the present instance, claim 8 recites the broad recitation "carboxyl resin", and the claim also recites "such as amberlite IRC-50" which is the narrower statement of the range/limitation. Also, in the present instance, claim 8 recites the broad recitation "amino resin or inorganic matter", and the claim also recites "such as polylysine or aminosilane" which is the narrower statement of the range/limitation.

Considering Claim 9: Claim 9 recites the limitation "the metal-polymer hybrid" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Considering Claim 12: Claim 12 contains the proviso "wherein the solution of metal-polymer chelates(s) and/or the hydroxyl polymer including a silicic acid group and/or a nano powder". This sentence does not contain a verb and therefore it is unclear what the proviso is trying to claim. The proviso also appears to be directed not only to the instant composition, but towards to other compounds that are not included in the instant invention. As it is impossible to discern what the intended scope of the claim is supposed to be, the claim will not be examined with regard to prior art.

Considering Claim 40: Claim 40 recites the limitation "the hybrid moisture absorbent" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10, 13, 14, and 31-39 rejected under 35 U.S.C. 102(b) as being anticipated by Cho (KR 2001-0106359). Note: A machine translation is being used for the Korean document and all citations are directed towards this translation.

Considering Claims 1, 7, and 37-39: Cho teaches a solution comprising a balance of water (Example 2); 9% by weight chitosan (Example 2); 0.2% by weight of a zinc salt (Example 2). Cho also teaches an organic acid as being used in equal amount/9% as the chitosan (§19).

Considering Claims 2 and 3: Cho teaches the composition as comprising chitosan/a soluble carbohydrate polymer/molecule (Example 2). Additionally, the chitosan has amine groups, and therefore a portion of the chitosan is being interpreted as the amine matters.

Considering Claim 4: Cho teaches using gluconic acid/a carbohydrate molecule (§19). Additionally, the chitosan has amine groups, and therefore a portion of the chitosan is being interpreted as the amine matters.

Considering Claims 5 and 31-33: Cho teaches the metal as being zinc, iron, manganese, copper, or cobalt (§1013-15).

Considering Claim 6 and 34-36: Cho teaches the acid as being acetic acid or citric acid (§19).

Considering Claim 8: The Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. ability to perform solid-liquid separation and purification would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's

position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Considering Claim 10: The instant claims never positively include a polymer bridging agent. Therefore a limitation directed towards a polymer bridging agent is not limiting with regard to the scope of the claim.

Considering Claims 13 and 14: Claims 13 and 14 are directed towards intended uses for the composition. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claims 15-30 rejected under 35 U.S.C. 102(b) as being anticipated by Cho (KR 2001-0106359). Note: A machine translation is being used for the Korean document and all citations are directed towards this translation.

Considering Claims 15-30: Cho teaches a metal-polymer chelate (Abstract). Claims 15-30 are directed towards intended uses for the composition. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claims 1-8, 10, 11, 13, 14, and 31-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Seid et al. (US 2001/0014334).

Considering Claims 1, 6, 7, and 33-39: Seid et al. teaches a solution of a metal-polymer chelate (¶0081) comprising water, chitosan, acetic acid, and a metal salt (¶0082). Seid et al. gives the concentrations in a specific example as 0.2 weight percent chitosan, 0.2 weight percent acetic acid, 0.7 mM to about 143 mM of the metal/~0.5 to 10.2 weight percent, with the balance being water (Example 3).

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Considering Claims 2 and 3: Seid et al. teaches the composition as comprising chitosan/a soluble carbohydrate polymer/molecule (Example 3). Additionally, the chitosan has amine groups, and therefore a portion of the chitosan is being interpreted as the amine matters.

Considering Claims 5 and 31-33: Seid et al. teaches the metal as being iron, copper, or zinc (§0082).

Considering Claim 8: The Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. ability to perform solid-liquid separation and purification would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Considering Claim 10: The instant claims never positively include a polymer bridging agent. Therefore a limitation directed towards a polymer bridging agent is not limiting with regard to the scope of the claim.

Considering Claim 11: Seid et al. teaches treating a cell with the chelate (§0021). At this point the solution will comprise a cell.

Considering Claims 13 and 14: Claims 13 and 14 are directed towards intended uses for the composition. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claims 15-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Seid et al. (US 2001/0014334).

Considering Claims 15-30: Seid et al. teaches a solution of a metal-polymer chelate (§0081). Claims 15-30 are directed towards intended uses for the composition. A

recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*The rejection of claim 10 presented below is presented as an alternative where the polymer bridging agent is a required component.*

Claims 9, 10, and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Seid et al. (US 2001/0014334) as applied to claims 1 and 8 above, and further in view of Bolotin et al. (US 20030224974).

Seid et al. teaches the composition of claims 1 and 8 as shown above. Considering Claims 9, 10, and 40: Seid et al. does not teach adding polyvinylpyrrolidone to the composition. However, Bolotin et al. teaches adding polyvinylpyrrolidone to a drug comprising a metal complex (¶0275). Seid et al. and Bolotin et al. are analogous art as they are concerned with the same field of endeavor, namely drug treatments comprising metal complexes. It would have been obvious to a person having ordinary skill in the art at the time of invention to have added the polyvinylpyrrolidone to the composition of Seid et al. as in Bolotin et al., and the motivation to do so would have been, as Bolotin et al. suggests, polyvinylpyrrolidone will function as a binder to allow a solid dosage form to be formed (¶0275).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

### ***Double Patenting***

Applicant is advised that should claim 1 be found allowable, claims 13 and 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant is advised that should claim 8 be found allowable, claim 10 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./

LJH

Supervisory Patent Examiner, Art Unit 1796

August 5, 2008

14-Aug-08